

CLAIMS

I claim:

1. A multi-package module comprising stacked lower and upper packages, each said package including a die attached to a substrate, wherein the upper and lower substrates are interconnected by wire bonding.
2. The multipackage module of claim 1 wherein at least one said package has wire bond interconnect of the die with the substrate.
3. The multipackage module of claim 1 wherein at least one said package has wire bond interconnect of the die with the substrate, and wherein the said package is fully encapsulated.
4. The multipackage module of claim 1 wherein at least one said package has wire bond interconnect of the die with the substrate, and wherein the said package is encapsulated only to an extent sufficient to protect the wire bonds between the die and the substrate.
5. The multipackage module of claim 1 wherein at least one said package is a ball grid array package.
6. The multipackage module of claim 1 wherein at least one said package is a land grid array package.
7. The multipackage module of claim 1 wherein at least one said package has flip chip interconnect of the die with the substrate.
8. The multipackage module of claim 1, further comprising a heat spreader.
9. The multipackage module of claim 1, further comprising an electromagnetic shield for at least one of the packages.
10. The multipackage module of claim 1, comprising a third stacked package.

11. A method for making a multipackage module, comprising
providing a first package including at least one die on a first package substrate,
placing over the first package a second package including at least one die on a second
package substrate, and
forming wire bond z-interconnects between the first and second substrates.
12. The method of claim 11 wherein providing the first package comprises providing an
unsingulated strip of packages.
13. The method of claim 11 wherein placing the second package over the first package
comprises applying an adhesive onto an upper surface of the first substrate and placing the
second package onto the adhesive.
14. The method of claim 13 wherein the adhesive is a curable adhesive, and further
comprising curing the adhesive.
15. The method of claim 11 wherein providing the first package comprises testing
packages for a performance and reliability requirement and selecting the first package as
meeting the requirement.
16. The method of claim 11 wherein placing the second package over the first package
comprises testing packages for a performance and reliability requirement and selecting the
second package as meeting the requirement.
17. The method of claim 11, further comprising attaching second-level interconnect balls
onto the first package substrate.
18. The method of claim 11, further comprising encapsulating the stacked packages in a
multi-package module molding.